In the character of the sculpture of area of metathorax resembles *P. melbourneusis*, Ckll., but that is larger, with the upper lateral corners of metathoracic truncation prominent, the pubescence pale fulvous, &c. In the table of Smith's species it runs to 3, and does not go into any of the divisions. *P. tilachus* differs from it at once by the coarsely punctured thorax, *P. lacthius* by the flagellum fulvo-testaceous beneath, *P. taluchis* by the strongly yellowish wings, *P. hiltacus* by the clear wings and rufo-testaceous tegulæ.

Parasphecodes speculiferus, var. *a*.

♀.—Almost 9 mm. long.

Tegulæ piceous, narrowly whitish in front.

Hab. Sydney, N.S.W., at flowers of *Angophora*, Dec. 1, 1910 (*Froggatt*, 105).

I had at first put this aside as distinct, but it has no satisfactory characters.

XXIII.—*Descriptions of new Arachnids of the Orders Solifugæ and Pedipalpi.* By S. Hirst.

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In the present note four new species of Solifugæ and a new pedipalp are described ; two other species which I described in earlier papers are commented upon also. Two of the new species of Solifugæ seem to me to be of especial interest: one of them belongs to the subgenus *Galeodopsis*, Birula—a subgenus which can be recognized from all other Galeodidæ by the presence of two pairs of spines on the second segment of the fourth leg. Hitherto *Galeodopsis* was only known to occur in South-east Persia. The new species is from Tripoli, North Africa. The other interesting new species belongs to the genus *Othoes*, which I founded in February 1911 for a very peculiar Galeodid found in the Anglo-Egyptian Sudan. Unfortunately the locality of this second species of the genus is not known.

Galeodes (*Galeodopsis*) *tripolitanus*, sp. n.

Closely allied to *Galeodes* (*Galeodopsis*) *cyrus*, Poc., but differing from that species as follows :—

Flagellum very different in shape, the blade being much

wider. In *G. tripolitanus* the blade is distinctly longer than the stalk of the flagellum, but in *G. cyrus* it is very much longer than the stalk (figs. 1 & 2).

Fig. 1. Fig. 2.

Fig. 1.—*Galeodes* (*Galeodopsis*) *tripolitanus*, sp. n., ♂. Side view of flagellum.
Fig. 2.—Ditto of *G.* (*G.*) *cyrus*, Poc.

Palp.—Strong spiniform bristles of tibia distinctly longer than those of *G. cyrus*. On the inner side of the ventral surface of the metatarsus there are five spines, three of them being strong and slightly longer than the height of the segment, the others a little shorter and much more slender; on the outer side there are only four spines, two of them being strong; cylindrical bristles of this segment very similar to those which are present in *G. cyrus*.

Legs.—There is a slight difference in the appearance of the setæ on the ventral surface of the fourth leg; in the new species these bristles are slightly shorter and stouter than in *G. cyrus* and dark in colour. [Armature of tarsi of legs exactly the same as in *G. cyrus*; middle segment of tarsus of fourth leg with two pairs of spines, as in that species.]

Colour yellow. Head-plate darkened in front, but not so extensively as in *G. cyrus*. [The abdomen is much shrivelled, but is yellowish and apparently without any dark band.] Chelicera pale yellow and *without any dark stripes*. Palp similar in coloration to that of *G. cyrus*, the tibia, metatarsus, and tarsus being infuscate; the tibia, however, is only deep brown, whilst the metatarsus is black. Legs yellow throughout their length.

Measurements in mm.—Total length 30; width of head-plate 8; length of tibia of palp 21·5, of its metatarsus 15·5.

Material.—A single specimen of the male sex (in bad condition); collected by Mr. J. I. S. Whitaker at Wadi Agarib, just N.W. of Sokna, Tripoli, July 3rd, 1901.

Note.—Dr. A. Birula gives a detailed description (Bull. Ac. Sc. St. Petersburg, (5) xxii. p. 262, figs. 1–3, 1905) of a Persian species of *Galeodopsis* which he considers to be *G. cyrus*, Poc. According to his description and figure, the

flagellum of his specimen differs considerably in shape from that of the real *G. cyrus*, however, and is much more like the flagellum of *G. tripolitanus*, sp. n. Although very closely allied both to *G. cyrus* and *G. tripolitanus*, I think that Birula's species should be regarded as distinct, and I propose the new specific name *birulæ* for it.

Genus Othoes, Hirst.

This genus can be easily distinguished from *Galeodes* by the much greater length of the terminal part of the claws of the posterior legs. Moreover, the ventral surface of the tibia and metatarsus of the palp is only furnished with fine hairs, spines and strong bristles being entirely absent. Owing to the similarity in the length of their appendages and of the coloration of the palp the species of this genus present a considerable superficial resemblance to those of *Galeodopsis* (subgen. of *Galeodes*), but they differ from them in a number of very important structural characters. The stigmata of the second and third abdominal segments are pectinate above and the basal portion of the claws is hairy in *Othoes*, as in all other Galeodidæ.

Othoes vittatus, sp. n.

Colour.—Head-plate brown, with a yellowish central streak; ocular tubercle black, but it has a pale narrow line in the middle. Dorsal surface of thoracic segments and the tergites of the abdomen deep brown; the sides and ventral surface of the abdomen yellow. Chelicera marked above with three rather narrow brown stripes. Palp very similar in coloration to that of *O. floweri*, the tibia and metatarsus being black and the tarsus also rather strongly infuscated. Legs yellowish.

The difference in structure between this new species and *O. floweri* is not very great. The following is a comparison between them:—

Armature of *chelicera* almost exactly as in *O. floweri*, the only difference being that a minute tooth is present between the two distal teeth in the new species.

Palp resembling that of *O. floweri* very closely both in structure and proportions.

Legs.—Tarsi of legs of second pair armed with the same number of spines as in *O. floweri*, and the tarsal armature of the legs of the fourth pair is also exactly similar in these two species. Tarsus of third leg with | 1+2+2+2 | 2 |

spines. [Only one of the legs of the third pair of my specimen remains, the other having been broken off, so that this formula needs confirmation.] Metatarsus of fourth leg lacking the most proximal of the three unpaired spines which are present in *O. floweri*.

Measurements in mm.—Length of trunk 24; width of head-plate 6; length of tibia of palp 11, of metatarsus of palp 7·25, of fourth leg 44·25.

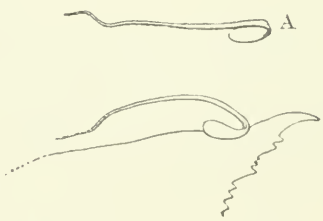
Material.—A single example, of the female sex, without any locality.

Remarks.—Very closely allied to *O. floweri*, Hirst, from which it differs chiefly in having the abdomen furnished dorsally with a dark median band.

Solpuga pugilator, sp. n.

♂. *Chelicera.*—Basal enlargement of flagellum low and very different in shape to that of *S. venator*, Poc. Free portion of flagellum arising above the second tooth (from the distal end); it is long, but does not reach back nearly so far as the base of the chelicera; near its distal end it has a distinct lateral curvature, whilst the tip is more slender than

Fig. 3.



Side view of flagellum and immovable finger of chelicera of *Solpuga pugilator*, sp. n. A. Dorsal view of the flagellum.

the rest of the free portion of the flagellum and is sharply pointed. Two minor teeth are present between the second tooth from the distal end and the next large tooth, and a single minor tooth between the two large teeth of the movable finger. On its inner side above, some distance in front of the point at which the flagellum is attached, the immovable finger has a minute denticle or granule; its terminal fang is longer than is the case in *S. venator* (fig. 3).

Palp.—Cylindrical bristles are present on the ventral

surface of the tibia, metatarsus, and tarsus, but they are most numerous on the metatarsus.

♀.—As in the male, the immovable finger of the *chelicera* has two little teeth between the second and third large teeth, and the movable finger a single little tooth between its two large teeth.

Colour.—Head-plate reddish brown except for the anterior margin and the ocular tubercle, which are black. Abdominal tergites deep brown, the integument immediately bordering them being black in the male but brown in the female. Ventral surface of trunk yellow. Chelicera of male reddish brown above and yellowish at the sides, that of the female entirely yellowish. Palp and legs yellow; the malleoli also yellow.

Measurements in mm.—♂. Length of trunk 32·5; width of head-plate 8·75; length of palp 40, of its tibia 12·75, of its metatarsus 10·25, of fourth leg 56·25. ♀. Length of trunk 34; width of head-plate 9; length of palp 29, of its tibia 9, of its metatarsus 8, of fourth leg 43·5.

Material.—A male (the type) and a female labelled "Zoutpansberg, Transvaal (*J. P. Cregoe*)."

Solpuga fordi, Hirst.

Solpuga fordi, Hirst, Ann. & Mag. Nat. Hist. (7) xx. p. 38, figs. 5 *a*, 5 *b*, 5 *c* (1907).

Material.—Besides the types (from Lake Baringo) there are specimens of both sexes of this species in the British Museum collection, obtained by a Mr. Simon in Uganda, and also a male specimen labelled "Aios, November 1901."

Remarks.—This *Solpuga* is slightly reddish yellow in colour, and the anterior margin of its head-plate has a dark narrow line; the tergites are deep brown in both sexes, and the integument bordering them laterally is dark grey (in the female only?); ventral surface yellowish. In both sexes two minute teeth are present between the second tooth from the distal end and the next large tooth of the immovable finger of the chelicera, whilst a single minute tooth is placed between the two large teeth of the movable finger.

Karschia tibetana, Hirst.

Karschia tibetana, Hirst, Ann. & Mag. Nat. Hist. (7) xix. p. 322, figs. 1 & 2 (1907).

Material.—Some time after describing this species a number of additional specimens of both sexes from Kamba

Djong, Tibet, were handed over to me. The types were collected at Gyantse.

Remarks.—In my description I mention the fact that a little denticle is present on the flagellum at some distance from its distal end. This denticle is very minute and inconspicuous, however; it is drawn too large in the figure. In the female there are usually only two minor teeth between the two large teeth of the movable finger, but sometimes three are present; one or two of the smaller teeth of the immovable finger shown in my figure are absent in some female examples but present in others.

Eremobates audax, sp. n.

♂. *Chelicera.*—Immovable finger with a small but distinct elevation close to the basal end above; ventrally it has a longitudinal groove. On each side of the vertical part of the chelicera there is a row of three or four teeth, the uppermost tooth being the largest. Movable finger with the dentition apparently precisely similar to that of *E. affinis*, Krpln. (as figured by Kraepelin in 'Das Tierreich'), a small sharply pointed tooth being present on the anterior side of the principal tooth and another low but elongated tooth situated a little distance in front of it (fig. 4).

Fig. 4.

Side view of chelicera of *Eremobates audax*, sp. n., ♂.

Palp.—Distal half of femur with a number of spiniform bristles on the inner side. On the inner side of the tibia below there is present a row of about 5–6 spiniform bristles, two of which are larger than the others, and a little to the outer side of these bristles there is another row of about the same number of very much weaker and shorter spines (bristles); numerous fine cylindrical bristles are also present on the lower surface of the tibia, but they are not so numerous at its proximal end as on the rest of its ventral surface. Metatarsus and tarsus without either spines or strong spiniform bristles, but they are furnished ventrally throughout

their length with very numerous slender cylindrical bristles. Papillæ are absent.

Legs.—Metatarsus of fourth leg armed with a row of six spines on the inner side of its ventral surface, and also with an apical spine.

Colour.—Head-plate rather deep brown, but with an indistinct central yellowish streak; ventral surface of cephalothorax yellow. Abdomen rather dark brown above, the tergites being very dark; its ventral surface is paler. Chelicera dark yellowish to pale brown in tint. Femur of palp yellowish except at the distal end, which is dark brown; tibia, metatarsus, and tarsus of palp deep brown throughout their length above. Proximal segments of legs and the malleoli yellow; femora of anterior legs brown at the distal end only; the posterior legs have this segment deep brown distally for more than half its length; tibiæ of anterior legs only slightly darkened, but those of the posterior legs are deep brown throughout their length; metatarsi of posterior legs brown at the proximal end; tarsi yellowish throughout.

Measurements in mm.—Length of trunk 19, of tibia of palp 9·75, of metatarsus of palp 7; width of head-plate about 5·75.

Material.—An adult male example (the type) and an immature example from Mexico (Fry Coll.). Both these specimens are dry and pinned.

Remarks.—Closely allied to *E. affinis*, Krpln., and to *E. girardi*, Putnam (both of which are found in Arkansas). The new species differs from the former in the coloration of its appendages and from the latter in the dentition of the movable finger of the chelicera.

Mastigoproctus formidabilis, sp. n.

♂. First *sternite* marked with a pair of very shallow impressions and with a little median impression near the posterior margin also; it is furnished with transverse ridges and granules at the sides and is transversely striate in the middle, except posteriorly, where it is finely punctured. Second sternite very coarsely punctured at the sides and with the usual raised area in the middle. Third sternite with distinct punctures and striæ. Remaining sternites smooth and polished; they have only a very indistinct sculpturing of fine irregular lines, and are furnished with very fine but distinct punctures; close to the lateral margins a few minute granules are present.

Ommatidia minute and oval in shape, like those of

M. giganteus, Lucas. Fang of *chelicera* very similar in shape to that of *M. giganteus*.

Palp much more slender than that of *M. maximus*, Tarnani, especially the tibia and hand, the latter being a little less than twice as long as wide. Trochanter not very strongly wrinkled and granular above; it has five spines above, the outermost one being much the longest (fig. 5);

Fig. 5.

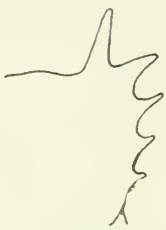


Fig. 6.

Fig. 5.—*Mastigoproctus formidabilis*, sp. n., ♂. Inner margin of trochanter of chela.
Fig. 6.—Ditto, ♀.—Inner margin of trochanter of chela.

the two spines of the ventral surface are well developed, the outer being much the longer. Femur shining and smooth above, except for some granules towards the inner side; the punctures are fine above, but below they are larger and more distinct. Tibia and hand also smooth and polished; the punctures are quite fine and rather sparse on these segments; those on the hand, however, are slightly more distinct than those on the tibia. Tibial apophysis very long and rather slender. A distinct excavation is present at the base of the edge of the immovable finger of the hand, and a slightly enlarged conical granule at the base of the edge of the movable finger. A rather large and sharply pointed tooth is placed on the ventral surface of the hand near to the point of attachment of the movable finger.

♀. *Palp* with its segments less elongate and more distinctly punctured than is the case in the male; its trochanter has six spines above, but the additional (outer) spine is minute and is situated at a little distance from the others; the spine of the angle is the longest, its length being slightly greater than that of the larger of the two outer spines (fig. 6). Immovable finger of normal shape.

Legs.—Second segment of tarsus of first leg longer than the third, instead of being shorter than it, as is the case in

M. proscorpio, Latr. A spine is present below at the distal end of the tibiæ of the third and fourth legs.

Colour.—Trunk dark brown above; its ventral surface is usually a little paler, and the coxæ of the legs and the middle part of the first sternite are reddish. Palp dark brown. Proximal segments of legs, including the femora, rather dark brown or dark reddish brown above; the distal segments reddish.

Measurements in mm.—Length of trunk 55·5, of carapace 22·5.

Material.—About forty specimens, including numerous adults of both sexes; collected by Mr. Briceno at La Polonia, Venezuela.

Remarks.—The male of this species can easily be recognized from that of the other described species of the genus *Mastigoproctus* by the shape of the immovable finger of the hand, &c.

XXIV.—*Descriptions of new Species of* Cerithium, Clanculus, *and* Soletellina. By G. B. Sowerby, F.L.S.

Cerithium vignali, sp. n. (Fig. 1.)

Testa elongato-turrita, alba, plus minusve pallide fulvo tincta vel strigata; anfractus 13, planato convexi, costis numerosis trinodulosis longitudinaliter muniti, spiraliter tri-lirati et multistriati; anfractus ultimus subquadratus, $\frac{1}{3}$ longitudinis testæ æquans, haud rostratus, spiraliter sex-liratus, uni-varicosus; apertura oblique ovata; labrum crenulatum, extus varicosum; columella arcuata, lævis, postice uni-lirata; canalis perbrevis.
Long. 36, lat. 11 mm.

Hab. New Caledonia.

A long, narrow, white shell, more or less faintly tinged and streaked between the numerous longitudinal ribs with light brown. The ribs are pretty equally trinodulose, terminating abruptly at the top of the whorls. The whorls (excepting the last) are three-ridged and all are spirally striated, the last having six ridges, of which the three basal ones are more sharply raised than the others.

This species has been compared with *C. armatum* (Phil.), from which it is readily distinguished; the row of nodules against the suture being rounded, scarcely larger than the